



October 29, 2012

Daniel R. Rest, P.E.  
HBK Engineering, LLC.  
921 W. Van Buren St., Suite 100  
Chicago, IL 60607

RE: Thorium Monitoring at Grand Ave. & St. Clair St. on 10/24/12

Dear Mr. Rest:

Stan A. Huber Consultants, Inc (SAHCI) was hired by your firm to provide radiation monitoring during the drilling of one soil boring at Grand Ave. and St. Clair St. in Chicago, Illinois. The monitoring was performed on October 24, 2012.

#### Instrumentation

Surface gamma scans were performed by Joel Ahrweiler using a Ludlum Model 2221 Scaler / Ratemeter with attached 2"x2" NaI probe. The instrument was calibrated on November 8, 2011. The USEPA action level of 7.1 picocuries per gram (pCi/g) total thorium for this instrument is 19,110 counts per minute (cpm). The average background count rate for this location was found to be between 7,400 cpm and 9,500 cpm.

#### Soil Gamma Scans

Gamma surface scans were performed using the Ludlum Model 2221 Scaler / Ratemeter described above. Data was collected by surveying each split spoon soil sample as it was obtained from the boring. Any additional soil that was removed from the boring was also monitored.

The maximum gamma count rates for each split spoon are detailed on the attached Radiation Survey Form. The count rates for the boring ranged from 7,400 cpm to 8,000 cpm. No count rates were found at any time that exceeded the threshold limit of 19,110 cpm.

#### Additional Monitoring

Since no count rates were identified above the 7.1 pCi/gram threshold limit, no additional soil sampling, air monitoring, or personnel monitoring were performed.

You will need to forward a copy of this report to the City of Chicago Department of Public Health (Attn: Rahmatunsia Begum) with the CDOT Permit Number in the subject line. I will be providing a copy of this report to USEPA, as required.

Thank you for your assistance with this project. If you have any questions or need additional information please call me at (815) 485-6161.

Sincerely,  
Stan A. Huber Consultants, Inc.

A handwritten signature in black ink, appearing to read 'G. Huber', with a long horizontal flourish extending to the right.

Glenn Huber, CHP  
President

## Radiation Survey Form

Location/ Project ID: HBK Engineering (Boring SB-12-417-001)

Date: 10/24/12

Technician: Joel Ahnweiler

Inst Model: Ludlum 2221

Serial No. : 134542

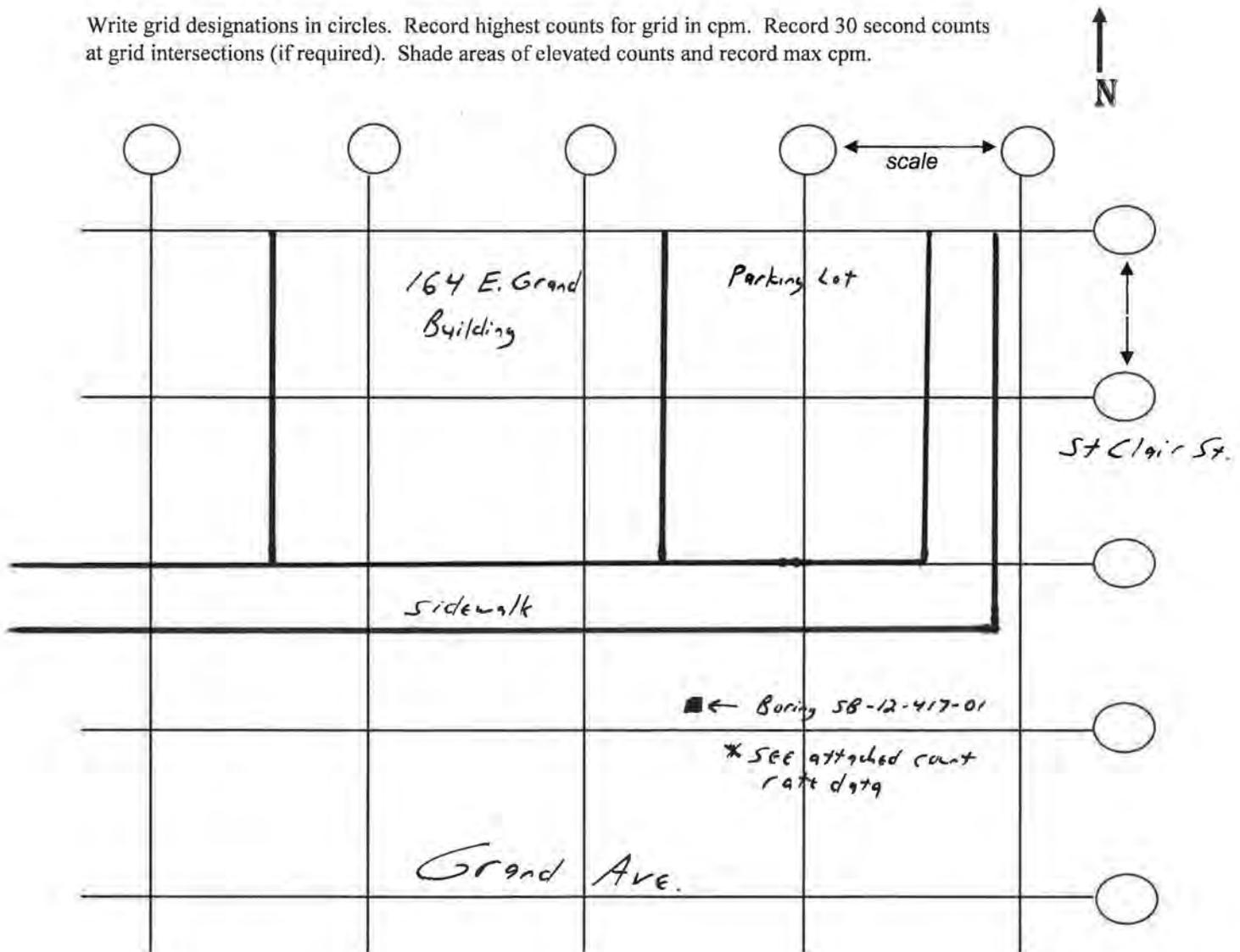
Probe Type: 1"x1" NaI / 2"x2" NaI  
 Shielded / Not Shielded

Lift Elevation: surface → -30'

Background 7.4 - 9.5 kcpm

Action Level: 19,110 cpm

Write grid designations in circles. Record highest counts for grid in cpm. Record 30 second counts at grid intersections (if required). Shade areas of elevated counts and record max cpm.



## Soil Boring Log

Stan A. Huber Consultants, Inc

Date: 10/24/2012 Instrument ID: Ludlum 2221  
Technician: Joel Ahrweiler serial no. 134542  
Boring ID SB-12-417-001 9 (HBK Engineering) (unshielded)

Depth	Max CPM
S to -2.5'	8,000
-3.5' to -4.5'	7,500
-6' to -7.5'	7,700
-8.5' to -10'	7,500
-13' to -15'	7,600
-18.5' to -20'	7,400
-23.5' to -25'	7,500
-28' to -30'	7,400